

REMARKS

Applicant respectfully requests reconsideration. Claims 1-37 and 39-44 were previously pending in this application. By this amendment, Applicant is canceling claim 2 without prejudice or disclaimer. Claims 1, 6, 11, 16, 18 and 29 have been amended. New claims 45 and 46 have been added. As a result, claims 1, 3-37 and 39-46 are pending for examination with claim 1 being an independent claim. No new matter has been added.

Claim 1 has been combined with claim 2. Claims 1 and 16 have been amended to clarify that the TiO₂ and/or ZnO is doped, i.e., in the present tense.

The units specified in claim 6 have been corrected to “mole %” based on page 16, lines 11 to 13 of the description. Similarly, the units specified in claim 11 have also been corrected to “% by weight” based on page 8, lines 16 to 17.

The benzimidazole sulfonic acid sunscreen agents in claim 18 have been amended for conformity with the description (page 7, lines 17 and 18) and now refers to the salts of said sunscreen agents.

New claim 45 is based on page 17, line 30 to page 18, line 9. New claim 46 is based on page 12, line 30 to page 30, line 1.

Rejections Under 35 U.S.C. § 102

1. The Examiner rejected claims 1, 11-24, 26-29, 35 and 37 under 35 U.S.C. § 102(b) as being anticipated by Mitchnick et al. (U.S. Patent No. 5,441,729). Applicant respectfully requests reconsideration.

The Examiner has not rejected claim 2 under 35 USC 102. That subject matter has been combined with claim 1. There are no examples in the Mitchnick patent of a composition comprising (i) an ingredient that is adversely affected by UV light in the presence of TiO_2 and/or ZnO , (ii) TiO_2 and/or ZnO doped with another element and/or reduced ZnO , and (iii) TiO_2 and/or ZnO which is not doped or reduced. Claim 1 is therefore not anticipated by the Mitchnick patent.

2. The Examiner rejected claims 1, 3-5, 7-8, 11, 16-20, 26-35 and 37 under 35 U.S.C. §102(b) as being anticipated by Chopoorian (U.S. Patent No. 3,314,321). Applicant respectfully requests reconsideration.

The Examiner has not rejected claim 2 under 35 USC 102. That subject matter has been combined with claim 1. There are no examples in the Chopoorian patent of a composition comprising (i) an ingredient that is adversely affected by UV light in the presence of TiO_2 and/or ZnO , (ii) TiO_2 and/or ZnO doped with another element and/or reduced ZnO , and (iii) TiO_2 and/or ZnO which is not doped or reduced. Claim 1 is therefore not anticipated by the Chopoorian patent.

Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103

1. The Examiner rejected claims 2, 10 and 36 under 35 U.S.C. § 103(a) as being unpatentable over Mitchnick et al. (U.S. Patent No. 5,441,729). Applicant respectfully requests reconsideration.

The present invention is based on the finding that doped TiO_2 and/or doped or reduced ZnO mitigates the damaging effect of non-doped TiO_2 and/or non-doped or non-reduced ZnO on other ingredients in a composition following exposure to ultraviolet light. The inclusion of non-doped TiO_2 and/or non-doped or non-reduced ZnO in a composition is beneficial because they provide

both an additional UV light absorbing material and a pigment for the color matching of the composition.

Mitchnick et al is primarily concerned with the shape of the zinc oxide (i.e. rod-shaped) particles in UV screening compositions. The rod-shape of the particles in such compositions is believed to provide improved UV protection because the shape of the particles allows them to “assume a side-by-side arrangement or a criss-cross-packing arrangement..., such that there are relatively few gaps between the particles for UV rays to penetrate.” See column 1, lines 63 to 68.

Mitchnick describes the preparation of doped zinc oxide particles, but there are no examples or data that show any benefit of doping. Mitchnick merely speculates that “doping may increase the UV absorbance properties of the rods” (column 7, lines 34 to 36). The Examiner has noted that the zinc oxide rods in this document may optionally be combined “with other metal oxides, e.g. titanium oxides”, see column 11, lines 25 to 26. However, there is no explicit reference to combining doped zinc oxide with non-doped titanium dioxide as is claimed. There is nothing in Mitchnick that would motivate the skilled worker to replace the non-doped zinc oxide in a composition or formulation of the examples with doped zinc oxide.

Even if the non-doped zinc oxide was replaced with doped zinc oxide in the compositions and formulations of the examples of Mitchnick, then the claimed composition still would not be obtained. The examples in Mitchnick relate to compositions or formulations that contain non-doped zinc oxide and either (a) an organic sunscreen agent (see column 12, lines 1 to 14), or (b) non doped titanium dioxide (see the second table in column 12 and the tables in column 13). The only organic sunscreen agent described in Mitchnick is octyl methoxycinnamate, which is an ingredient that is adversely affected by UV light in the presence of TiO_2 and/or ZnO as in the composition of claim 1. Notably, there are no examples in Mitchnick that contain both non-doped TiO_2 and octyl methoxycinnamate, as well as non-doped zinc oxide. Mitchnick appreciates that the presence of non-doped TiO_2 in a composition has an adverse effect on the organic sunscreen ingredient. Thus, a person skilled in the art would not modify the compositions or formulations exemplified in

Mitchnick to include both non-doped TiO_2 and an organic sunscreen agent, as well as doped zinc oxide.

Finally, Mitchnick does not describe compositions comprising doped titanium dioxide. Thus, this document does not render obvious the instant claims insofar as it relates to compositions comprising doped TiO_2 , and TiO_2 that is not doped and/or ZnO that is not doped or reduced, as claimed in the present application.

2. The Examiner rejected claims 6, 17-18 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Chopoorian (U.S. Patent No. 3,314,321). Applicant respectfully requests reconsideration.

The subject matter recited previously in claim 2 (now in claim 1) has not attracted an objection under 35 USC 103 based on Chopoorian. Therefore, with the inclusion of the subject matter of claim 2 into claim 1, all of the claims are nonobvious over the Chopoorian patent.

3. The Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Mitchnick et al. in view of Knowland et al. (WO 99/60994). Applicant respectfully requests reconsideration.

For the same reasons as presented above in the response to the first obviousness rejection over Mitchnick, Applicant respectfully asserts that the combination of Mitchnick and Knowland does not render the claimed invention obvious.

In particular, Mitchnick appreciates that the presence of non-doped TiO_2 in a composition can have an adverse effect on other ingredients, i.e., the organic sunscreen ingredient. Thus, a person skilled in the art would not modify the compositions or formulations exemplified in

Mitchnick to include both non-doped TiO₂ and an ingredient which is adversely affected by UV light in the presence of TiO₂ and/or ZnO, such as an organic sunscreen agent, as well as doped zinc oxide.

Knowland is silent in respect of any stabilizing benefit of doped titanium dioxide to a photosensitive, degradable component present in a sunscreen composition. It follows that a person skilled in the art would expect doped titanium dioxide to have a similar degradative effect to non-doped titanium dioxide. Thus, the skilled person would not include doped titanium dioxide together with an component which is photosensitive or in which degradation is induced by another ingredient of the composition, based on the combined teachings of Mitchnick and Knowland.

Accordingly, withdrawal of this rejection is respectfully requested.

Double Patenting Rejections

1. The Examiner provisionally rejected claims 1-29 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/540,649.

The amendment to claim 1 is believed also to provide a distinction over claims 1-25 of copending Application No. 10/540,649. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-25 of copending Application No. 10/540,649.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

2. The Examiner provisionally rejected claims 1-36 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071.

The amendment to claim 1 is believed also to provide a distinction over claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071. Therefore, the instant claims are asserted to be non-obvious with respect to claims 8, 10-12, 16-20, 24-32, 34, 36, 50-52 and 54-55 of copending Application No. 10/588,071.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

3. The Examiner provisionally rejected claims 1-36 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570.

The amendment to claim 1 is believed also to provide a distinction over claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-14, 16-23, 27 and 28 of copending Application No. 10/555,570.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

4. The Examiner provisionally rejected claims 1-9 and 10-25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408 in view of Mitchnick et al.

The amendment to claim 1 is believed also to provide a distinction over claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408 in view of Mitchnick et al. Therefore, the instant claims are asserted to be non-obvious with respect to claims 1-14, 16-17 and 20-21 of copending Application Nos. 11/054,188 and 11/207,408.

In the event that the Examiner does not agree with the distinction noted above, the Examiner is respectfully requested to defer further consideration of the double patenting objection until an allowable set of claims have been obtained in this application.

5. The Examiner provisionally rejected claims 1-6 and 10-29 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 7-8 and 10 of U.S. Patent No. 6,869,569 in view of Mitchnick et al.

It is not clear to Applicant why the Examiner believes US 6,869,569 to be relevant to the invention as claimed. The '569 patent relates to apparatus for differentiating a sub-population of blood cells from other blood cells in a sample by measuring light scattering. There is no mention of compositions comprising TiO₂ or ZnO in the '569 patent. The objection based on US 6,869,569 should therefore be withdrawn.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: May 8, 2008

Respectfully submitted,

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